

Outstanding Projects of 2004

Four projects in this year's annual progress report exemplify outstanding coordination, design, and implementation:

- Edson Fichter Nature Wetland Project
- Hailey Big Wood River Enhancement Project
- Mud Creek BMP Implementation Project
- Thomas Fork Stream Restoration Project

Summaries for each of these outstanding projects are presented in the following sections.

Hailey Big Wood River Enhancement Project

Project Summary

The Hailey Big Wood Riverfront Improvement Project is almost complete. The overall project comprises two river restoration sub-projects:

- Stabilizing and restoring 1,700 linear-feet of river bank and installing rock structures at Lion's Park in Hailey to decrease scouring on the riverbed
- Removing the decommissioned Riverside Water Treatment Plant facility and creating a sediment-catch pond near Heagle Park in Hailey

At this time, the vast majority of the work is complete. There is currently \$3,065 remaining in DEQ grant funds to plant additional vegetation this fall (estimated in late-October 2004). Additionally, due to changes in project design at the decommissioned wastewater treatment facility, an additional \$16,500 in DEQ funds remain unspent. (See the budget section of this report for details.)

In October 2003, an extension of this grant was requested to determine the costs and benefits of connecting the Big Wood River to the pond; it has since been determined that continuing the effort to connect the pond to the river at the decommissioned wastewater treatment facility site is not feasible. A grant extension, until September 30, 2005 (Contract #S055, Amendment #01), was received, and DEQ was asked to transfer the remaining \$16,500 to the Croy Bridge Abutment Removal and Restoration sub-project. (A full 319 Nonpoint Source application was submitted to DEQ in February 2004.) Final approval is anticipated in the near future, and implementation of this alternative sub-project is expected by September 31, 2005.

Once the above tasks are completed, this project will be finished, and a final report will be submitted to DEQ.

Project Location

The Big Wood River and its tributaries drain an area of approximately 2,900 square miles in south central Idaho. The river originates in the Boulder Mountains at nearly 9,000 feet above sea level and flows for over 125 miles to its confluence with the Snake River, near Hagerman, Idaho.

The project area comprises the riverbank and floodplain immediately adjacent to the Big Wood River as it flows through the City of Hailey. Over time, the Big Wood River has created the Wood River Valley, a flat basin approximately a mile and a half wide where this project site is located. The valley floor here is composed of alluvial materials deposited by the river, and typical floodplain vegetation—cottonwood and red twig dogwood—predominates.

Beneficial Uses

The Big Wood River is currently listed as a high priority 303(d) water body by the Idaho Department of Environmental Quality, and a TDML has been completed.

Designated beneficial uses for this water body include cold water aquatic life, salmonid spawning, primary contact recreation, domestic water supply, special resource water, wildlife habitats, and aesthetics (at the stretch of the Big Wood River near Croy Creek.) Since 1980, the protection of the Big Wood River as a special resource water body has been identified by

environmental agencies as a serious and critical consideration for beneficial use attainment. Point source influence has been minimized to three direct dischargers in this stretch of the Big Wood River.

Pollutants

According to Dr. Balthasar B. Buhidar, Ph.D., of the Idaho Department of Environmental Quality, Twin Falls Regional Office, DEQ has determined that sediments, excess nutrients, and pathogens are the primary pollutants in the Big Wood River. As of October 2004, DEQ has not obtained samples to determine the actual decrease in sediments, excess nutrients, and pathogens, but samples are expected to be taken within the month.

Project Tasks

The Hailey Big Wood Riverfront Improvement Project augmented the protection of the Big Wood River from total suspended solids, total phosphorus, and bacteria laden within the sediment. This project was composed of two separate sub-projects located within the one and one-quarter mile stretch of the Big Wood River:

- *Lions Park Bank Stabilization and Restoration Sub-Project*—designed to eliminate unnatural fill material inputs into the Big Wood River and decrease the scouring effect on the river channel during high flows
- *2) Riverside Wastewater Treatment Plant Facility Removal and Sediment Catch Pond Sub-Project*—designed to catch excess sediment during high flows in the Big Wood River

Details on each task are described below.

Lions Park Bank Stabilization and Restoration Sub-Project Objectives and Tasks

Objective 1: Improve water quality along the Big Wood River by reducing sediments (gravel and sand) and fines (silt) from entering the river system

Task 1: After obtaining the necessary stream channel alteration permits, approximately 7,000 cubic yards of material above the river's high-water elevation was removed at Lion's Park in July 2002, decreasing the slope of the bank to a maximum of one foot of raise for every three feet of distance above high-water elevation. This effort also decreases flood potential for downstream landowners because of the removal of material from the floodplain.

Task 2: Approximately 200 willow-shoot bundles were planted to ground water depths (approximately 6-feet deep) to stabilize the riverbank.

Task 3: Idaho Power Co. moved electrical lines that ran parallel to the river channel. The lines were moved to run away from the river along the west side of Lion's Park, minimizing work along the river bank.

Objective 2: Remove manmade material, which is hindering the river's ability to meander naturally and dissipate its energy during high flow.

Objective 3: Improve and restore aquatic and wildlife habitat by installing rock structures and planting native riparian vegetation (grasses, sedges, rushes, cottonwoods, willows, red-osier dogwoods, etc.) that stabilize the riverbank.

Objective 4: Stabilize the riverbed, reducing the river's incising action by slowing its flow through this section. This includes installation of modified vortex weirs and rootballs in the river channel

Task 4: Seeded the riverbank and uplands using drought-tolerant native grasses and shrubs to stabilize the entire bank

Task 5: Large boulders were placed at the top edge of the bank slope to prevent City of Hailey Street Crews from encroaching on the restored area.

Task 1: Removed unnecessary concrete blocks (acting as rip-rap) and other man-made material along the riverbank.

Task 1: Installed woody root balls in river channel to improve fish habitat in four locations. After installation, the 2003 flood altered the most downstream structure and removed these root balls. These rootballs have not been replaced due to the potential whitewater park improvements in this location.

Task 2: Wood River Land Trust (WRLT) contracted Webb Landscaping to install the site's irrigation system, which will function for three years to fully establish riparian vegetation. Because an existing water line was tapped, a water right permit did not have to be acquired.

Task 3: Seeded the riverbank and uplands using drought-tolerant native grasses and shrubs to stabilize the bank. Over 220 native shrubs were planted at this site, and native grasses and forbs have successfully established. Additional topsoil was brought to areas along the bank where vegetation did not germinate. WRLT and local high school students planted grass seed along these portions to further enhance the riparian buffer.

Task 1: Four modified vortex-weirs were placed in the river channel. These rock structures are semi-permanent structures designed to decrease the impact of high flows on the bottom of the river channel, decreasing the scouring effect, incision rate and amount of additional sediment inputs.

Task 2: Rootball structures were stabilized along the riverbank to decrease flow velocities (and the scouring effect) along the outside edges of the channel. WRLT also created a trail to allow

easier access to the river while minimizing the public's impact on the riverbank.

Wastewater Treatment Plant Facility Removal and Sediment Catch Pond Sub-Project Objectives and Tasks

Objective 1: Remove decommissioned wastewater treatment facility infrastructure and foundations

Task 1: Removed a shed, in-ground equipment, concrete settling (aeration) basins, subsurface drainage pipes, fill material, and perimeter fencing that have altered the river's hydrology.

Objective 2: Create sediment catch pond designed to catch excess sediment during high flow runoffs

Task 1: Approximately 5,300 cubic yards of fill material was removed from the site to create a sediment catch pond approximately 100 feet long and up to 12 feet deep.

Note: It was discovered early on that the initial vision to create a sediment catch pond by pulling away the river's slope was not feasible from an engineering standpoint while maintaining safety for landowners downstream. As a result, a pond was created to catch sediment from high flows that run through the nearby neighborhood and around the adjacent Heagle Park, and then redirect this filtered water back to the river channel. Although this pond design is not physically connected to the river channel, it still catches sediment from flood events.

Objective 3: Restore wetlands surrounding sediment pond by replanting native sedges, grasses, shrubs and trees

Task 1: WRLT contracted Webb Landscaping to install the site's irrigation system. The irrigation system will function for three years to fully establish riparian vegetation. An existing water line was taped, so there was no need to acquire a water right permit.

Task 2: Seeded the wetland area using drought-tolerant native grasses and shrubs to stabilize the entire bank and restore wetland habitat and function. Planted over 3,000 wetland plugs and over 300 riparian shrubs at the site.

Task 3: WRLT partnered with Clearwater Landscaping to plant 2-4 inch alders, aspen and cottonwood along the pond to stabilize the soil surrounding the pond, and to shade the pond to minimize algae growth. Clearwater Landscaping offered a partial-donation.

Task 4: WRLT partnered with the Community School, the Environmental Resource Center, Blaine County Sheriff's Office, the local 4-H Club and

Mountain Adventure Tours to obtain volunteers to assist with riparian planting, forest restoration, and trail construction.

Objective 4: Install modified vortex weirs and rootballs along the river to slow the water flow and enhance aquatic habitat.

Task 1: Installed a bank barb and rootball structure along the riverbank to minimize scouring effect of river at the convergence of the pond and river.

Project Budget

The original project budget was amended in October 2003, and approved by DEQ. As of October 2004, project funding allocations and expenditures are presented in the following:

- Table 2 outlines total allocated funding and expenditures as of October 2004.
- Table 3 and Table 4 show the details of allocated funding and expenditures for the two sub-projects. (As stated, a transfer of \$16,500 to the Croy Bridge Removal and Restoration Sub-project has been requested, with the anticipation of spending the remaining \$3,065 of 319 Grant Funds for native trees at the sub-project sites and completion by late-October 2004.)

Table 2. Project Fund Allocation and Expenditures as of October 2004.

Project	319 Grant Amount Allocated	319 Grant Amount Spent as of Oct 2004	Match Amount Allocated	Match Amount Spent as of Oct 2004	Total Amount Spent
Riverside Plant Removal and Restoration	\$135,585	\$119,190	\$72,415	\$72,415	\$191,605
Lions Park Restoration	\$59,056	\$55,886	\$105,890	\$105,890	\$161,776
TOTAL	\$194,641	\$175,076	\$178,305	\$178,305	\$353,381

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Idaho Nonpoint Source Program

Table 3. Riverside Plant Removal and Restoration Funding Allocation and Expenditures as of October 2004.

Category	319 Grant Amount Allocated	319 Grant Amount Spent as of Oct 2004	Match Amount Allocated	Match Amount Spent as of Oct 2004	Total Amount Spent
Contractual (permit application)	\$2,500	\$2,500	\$0	\$0	\$2,500
Contractual (site design/engineering)	\$4,405	\$4,405	\$8,575	\$8,575	\$12,980
Contractual (site planning/restoration coordination)	\$3,787	\$3,787	\$0	\$0	\$3,787
Contractual (install outlet structure)	\$14,245	\$14,245	\$0	\$0	\$14,245
Contractual (install barbs)	\$1,623	\$2,163	\$0	\$0	\$2,163
Contractual (pond excavation)	\$64,769	\$64,769	\$0	\$0	\$64,769
Contractual (riparian planting)	\$7,500	\$6,566	\$0	\$0	\$6,566
Contractual (willow planting)	\$2,080	\$2,080	\$0	\$0	\$2,080
Contractual (install irrigation system)	\$10,000	\$12,175	\$0	\$0	\$12,175
Contractual (install diversion)*	\$1,750	--	\$0	--	\$0
Contractual (install weirs)*	\$6,500	--	\$0	--	\$0
SUBTOTAL	\$119,159	\$112,690	\$8,575	\$8,575	\$121,265
Equipment (for removal/disposal of concrete basins/in-ground equipment)	\$0	\$0	\$36,130	\$36,130	\$36,130
Equipment (for removal/disposal of infrastructure pipes)	\$0	\$0	\$11,900	\$11,900	\$11,900
SUBTOTAL	\$0	\$0	\$48,030	\$48,030	\$48,030
Staffing (City employees) (for removal/disposal of concrete basins, 4 people @\$25/hr	\$0	\$0	\$10,970	\$10,970	\$10,970
Staffing (City employees) (for removal/disposal of subsurface infrastructure, 4 people @ \$25/hr	\$0	\$0	\$4,840	\$4,840	\$4,840
SUBTOTAL	\$0	\$0	\$15,810	\$15,810	\$15,810
Supplies (wetland soil/riparian planting)	\$7,500	\$5,824	\$0	\$0	\$5,824
Supplies (diversion material)*	\$1,750	--	\$0	--	\$0
Supplies (weir material)*	\$6,500	--	\$0	--	\$0
SUBTOTAL	\$15,750	\$5,824	\$0	\$0	\$5,824
Indirect Costs	\$676	\$676	\$0	\$0	\$676
GRAND TOTAL	\$135,585	\$119,190	\$72,415	\$72,415	\$191,605

Idaho Nonpoint Source Program

Table 4. Lion's Park Restoration Funding Allocation and Expenditures as of October 2004.

Category	319 Grant Amount Allocated	319 Grant Amount Spent as of Oct 2004	Match Amount Allocated	Match Amount Spent as of Oct 2004	Total Amount Spent
Contractual (permit application)	\$2,500	\$2,500	\$0	\$0	\$2,500
Contractual (removal/disposal of 7,000 cubic yards fill/ final slope grade)	\$27,142	\$27,142	\$94,200	\$94,200	\$121,342
Contractual (install root balls)	\$500	\$500	\$0	\$0	\$500
Contractual (install weirs)	\$7,313	\$7,313	\$0	\$0	\$7,313
Contractual (riparian planting)	\$7,500	\$2,765	\$0	\$0	\$2,765
Contractual (willow planting)	\$4,202	\$4,202	\$0	\$0	\$4,202
Contractual (purchase/install irrigation system)	\$6,500	\$7,535	\$0	\$0	\$7,535
Contractual (relocate electric line)	\$0	\$0	\$9,590	\$9,590	\$9,590
SUBTOTAL	\$55,657	\$51,957	\$103,790	\$103,790	\$155,747
Supplies (rock for weirs)	\$0	\$0	\$1,600	\$1,600	\$1,600
Supplies (root balls)	\$0	\$0	\$500	\$500	\$500
Supplies (riparian plants)	\$2,500	\$3,030	\$0	\$0	\$3,030
Supplies (silt fence)	\$899	\$899	\$0	\$0	\$899
SUBTOTAL	\$3,399	\$3,929	\$2,100	\$2,100	\$6,029
GRAND TOTAL	\$59,056	\$55,886	\$105,890	\$105,890	\$161,776

* Riverside Treatment Plant- Contractual Labor and Supplies for all efforts to install diversion and weirs will not be spent. Requesting to transfer these funds (\$16,500) to the Croy Bridge Removal and Restoration Project

Public Education

WRLT has been involved in various public education efforts to promote this project and the continued community support to restore and enhance the Big Wood River's water quality. Examples of our efforts to educate the public about this project include the following:

- This project has been in several newspaper articles in the *Mountain Express* and the *Wood River Journal*.
- WRLT has partnered with Idaho Department of Fish & Game and multiple local businesses to stock the pond with 500 fish. Two "Kid's Fishing Day" events have been held; over 300 people attended each event, and each has been highly successful for educating people about the benefits of water quality and restoration. Fish & Game is looking to continually partner with WRLT and the City of Hailey to hold similar community events in the future.
- WRLT installed temporary signs outlining the benefits of water quality and habitat restoration at both restoration sites. Permanent signs are currently being constructed.
- WRLT partnered with the Environmental Resource Center and Mountain Adventure Tours to educate children, age 6-12, on water quality and restoration projects.
- WRLT partnered with Hemingway Middle School, Community School, and the local alternative school to use both restoration sites to teach school children from grades 6-12 about water quality, restoration, and the importance of riparian and fish habitat.
- WRLT has worked with the City of Hailey Parks and Lands Board to ensure that this restoration project is incorporated in the Lions Park Master Plan, adopted by Hailey City Council in September 2004.

Project Monitoring

Project monitoring has been addressed in several ways:

Photographic Documentation

WRLT has before and after photographs of both sites. Eleven sites have been established and photographed throughout the project area, with submittal of all photos to the DEQ Twin Falls Regional Office. Before and after photographs, and photographs of other efforts at the sites at the end of this report were included, along with a photographic location map.

Fish Monitoring

Idaho Department of Fish & Game conducted a mark and recapture study in September 2003 to continue their efforts in monitoring the fish population in this reach of the river. Results of these surveys will be presented in the final report.

River Channel Cross Section Monitoring

Mark Dallan, from the Soil Conservation Commission, has been assisting us in monitoring cross section depths along this section of the Big Wood River. The 2003 flood had a fairly significant effect on the river channel, and all data has been submitted to the DEQ Twin Falls Regional office.

Wolman Pebble Count Monitoring

WRLT has conducted Wolman pebble count surveys since before project implementation in 2001. Results of these surveys have been submitted to the DEQ Twin Falls Regional Office.

Summary

The Hailey Big Wood Riverfront Improvement Project is almost complete. Final tree planting at both sites is anticipated to occur in late October 2004. Additionally, the project is requesting to use the remaining \$16,500 to implement the Croy Bridge Abutment Removal and Restoration Project, which would be completed by September 30, 2005.

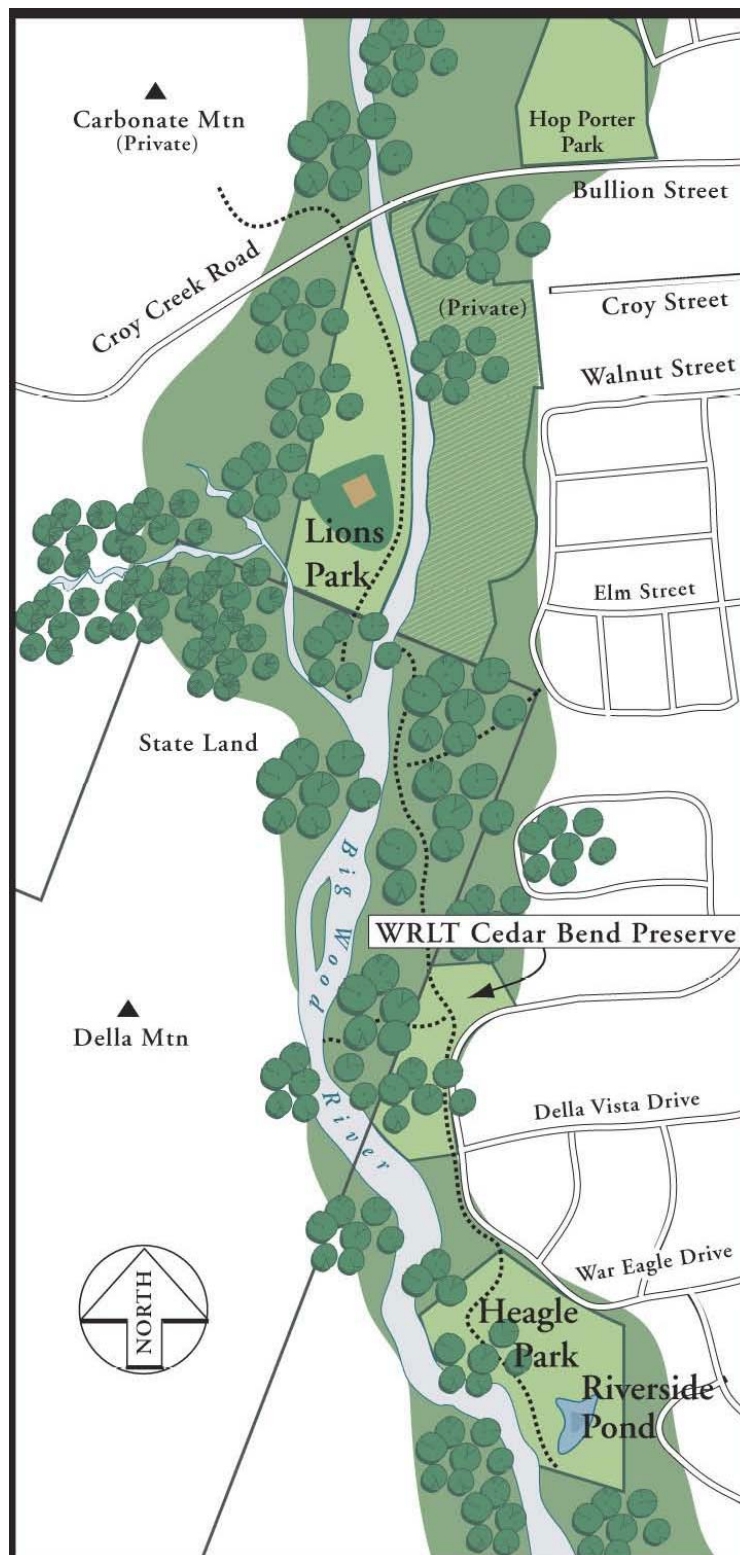


Figure 13. Overview of the Big Wood River Improvement Project.

Lions Park Bank Stabilization and Restoration Sub-Project

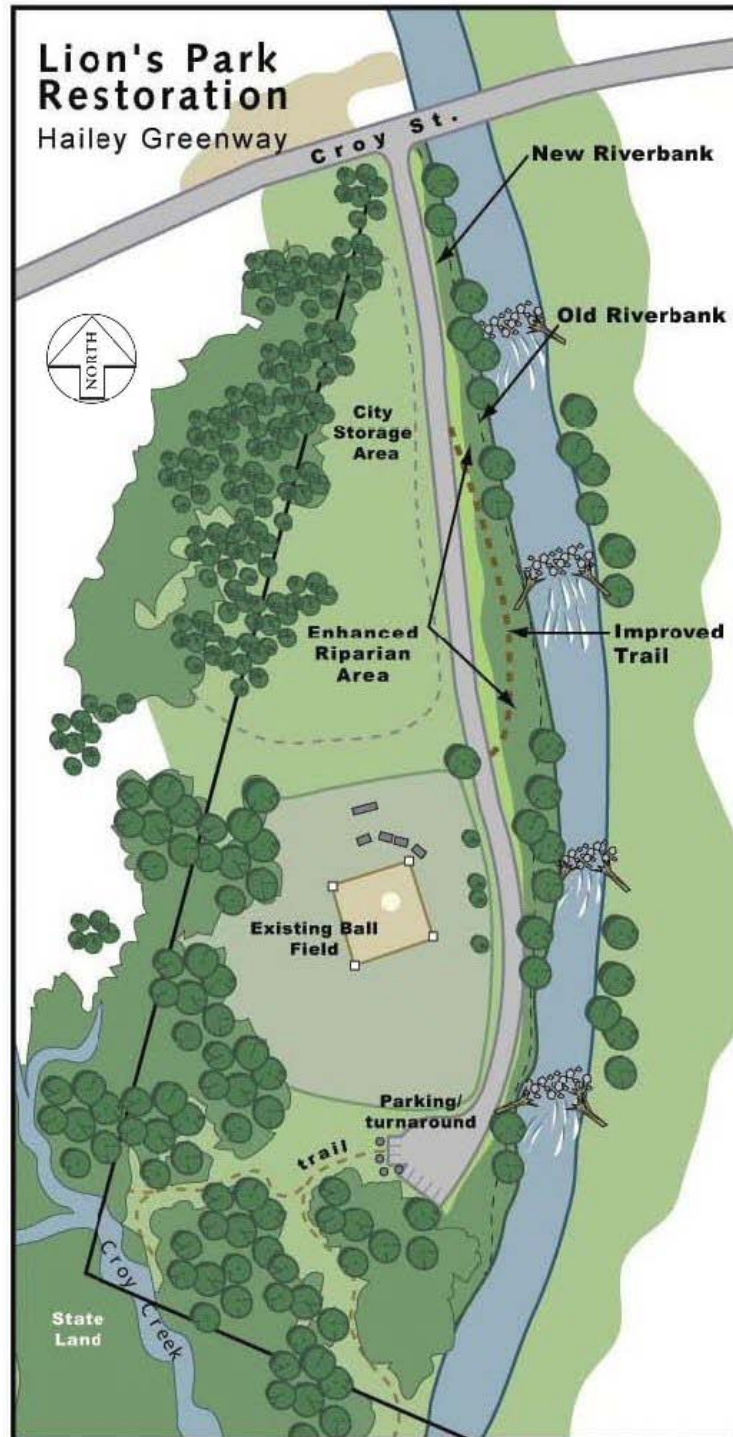


Figure 14. Close-up view of the Lyons Park portion of the project.



Figure 15. Decades ago, the Lyons Park area was an illegal landfill that encroached into the Big Wood River.



Figure 16. Approximately 4,000 cubic yards of material was removed from the area and properly disposed of in compliance with RCRA requirements.



Figure 17. This rootball and barb structure was installed to stabilize the stream bank.



Figure 18. Four rock drop structures were installed to stabilize the stream gradient.



Figure 19. After reclamation, the Lyons Park area became an aesthetically pleasing and environmentally healthy addition to the Big Wood River and the City of Hailey.

Riverside Wastewater Treatment Plant Facility Removal and Sediment Catch Pond Sub-Project

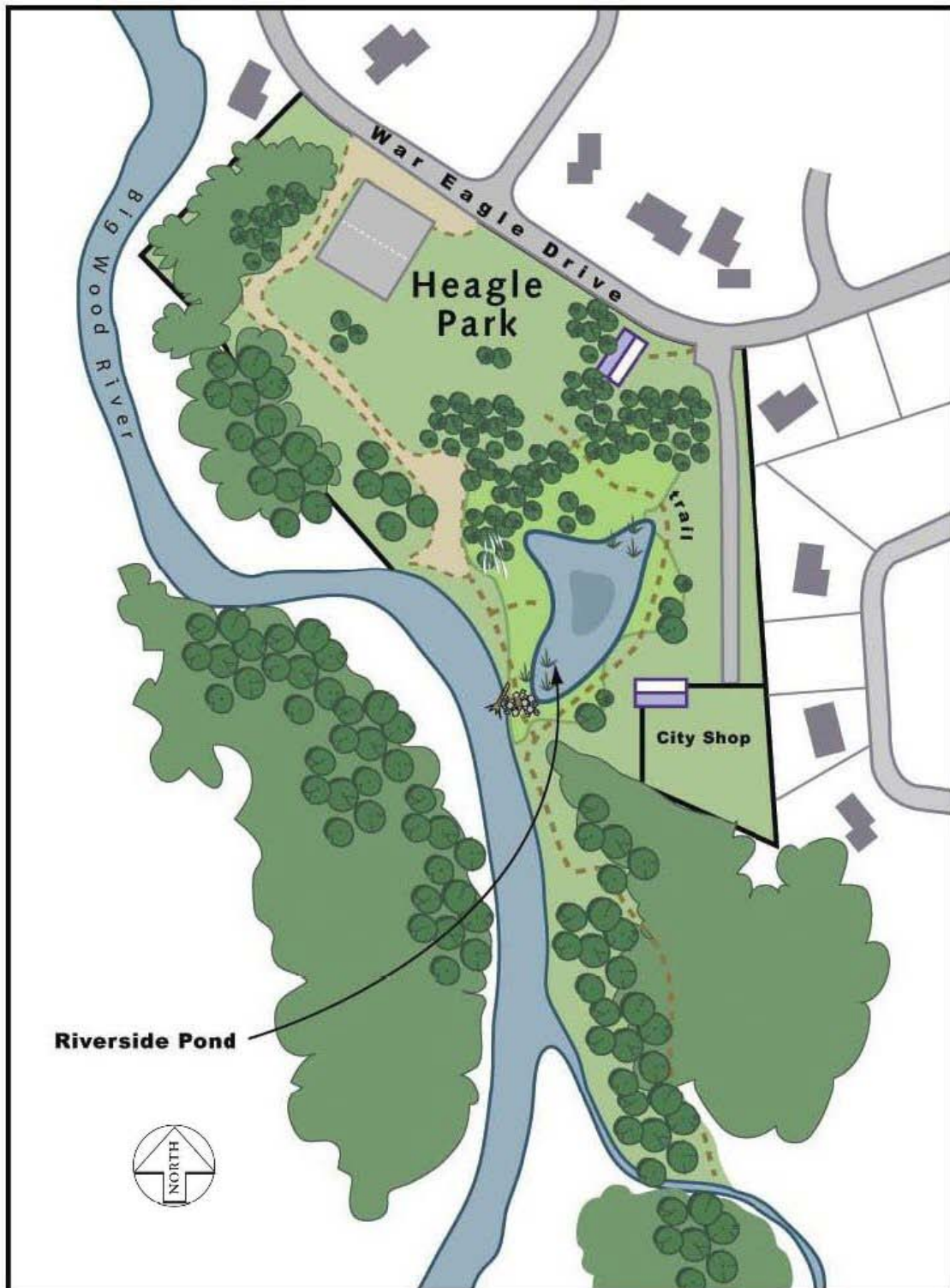


Figure 20. Close-up of the Riverside Water Treatment Facility reclamation project.



Figure 21. The wastewater treatment facility was decommissioned because it routinely became flooded by the Big Wood River, causing contaminated water to enter the river.



Figure 22. The abandoned wastewater treatment facility became an excellent location for a floodwater sediment settling pond.



Figure 23. What once was a eyesore was converted to a functioning settling pond and an aesthetically pleasing addition to the community.



Figure 24. Clockwise from top: pond at low water, pedestrian path surrounding pond, and view looking east at the pond. Locals now refer to this as 'Riverside Pond.'



Figure 25. Local volunteers played a major role in the conversion of the wastewater treatment facility into Riverside Pond.

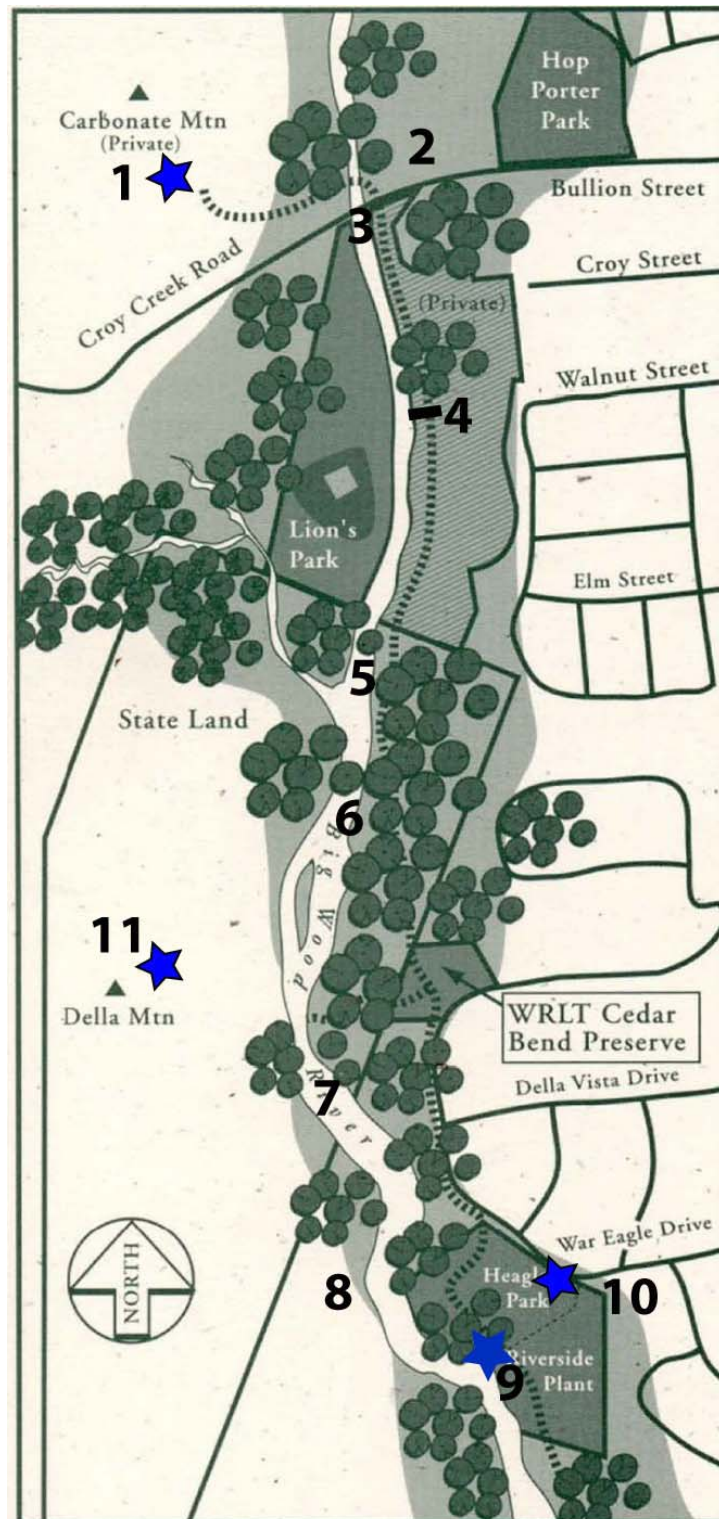


Figure 26. Photo monitoring is part of the on-going monitoring program.



Figure 27. Before and after cross sections are also part of the monitoring process.

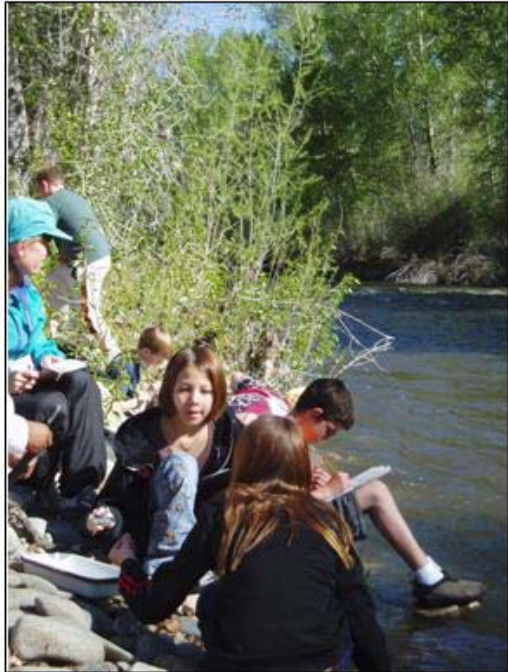


Figure 28. This project area has become a great place to educate Hailey kids and adults.



Figure 29. The fishing ain't bad either.